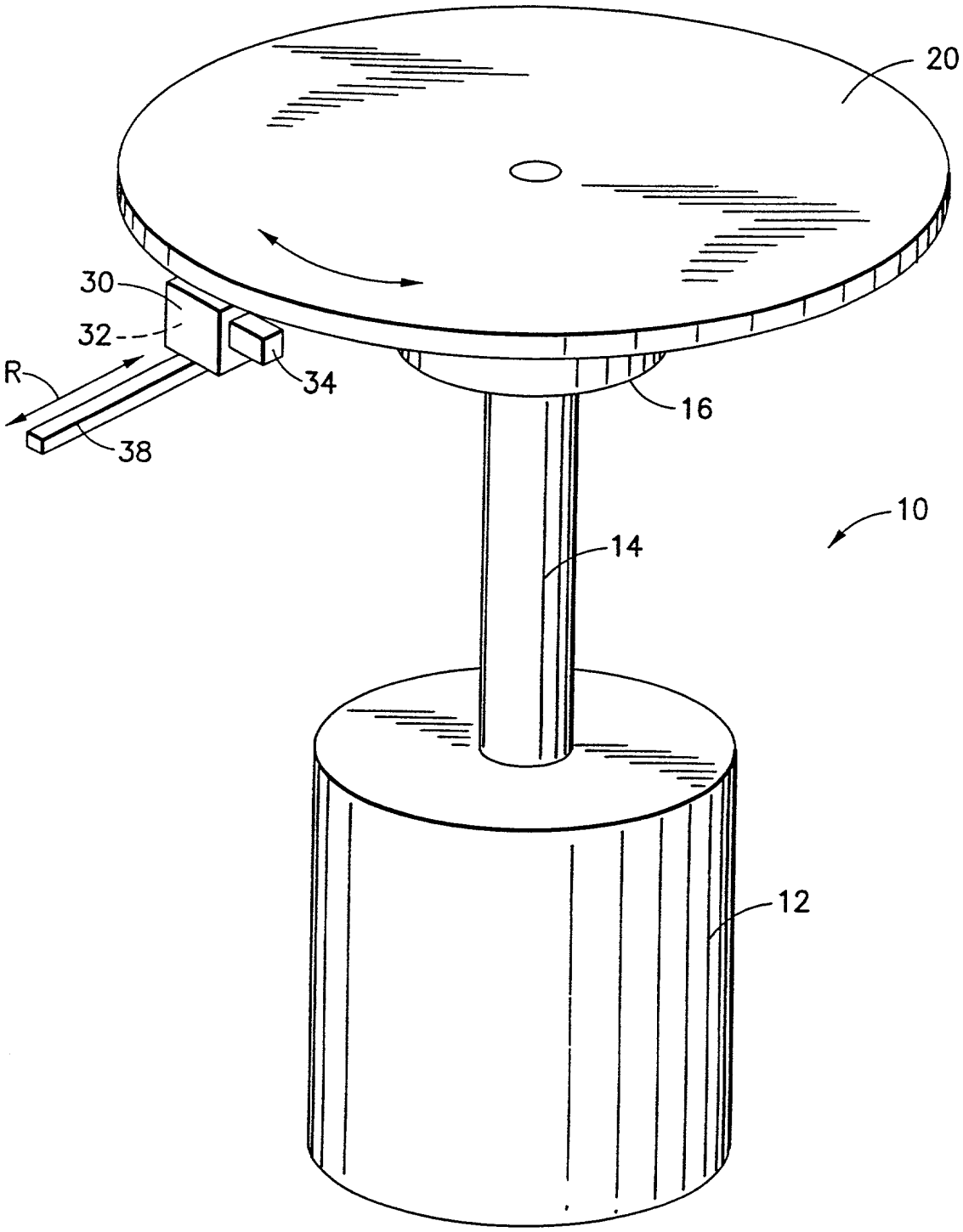


FIG. 1

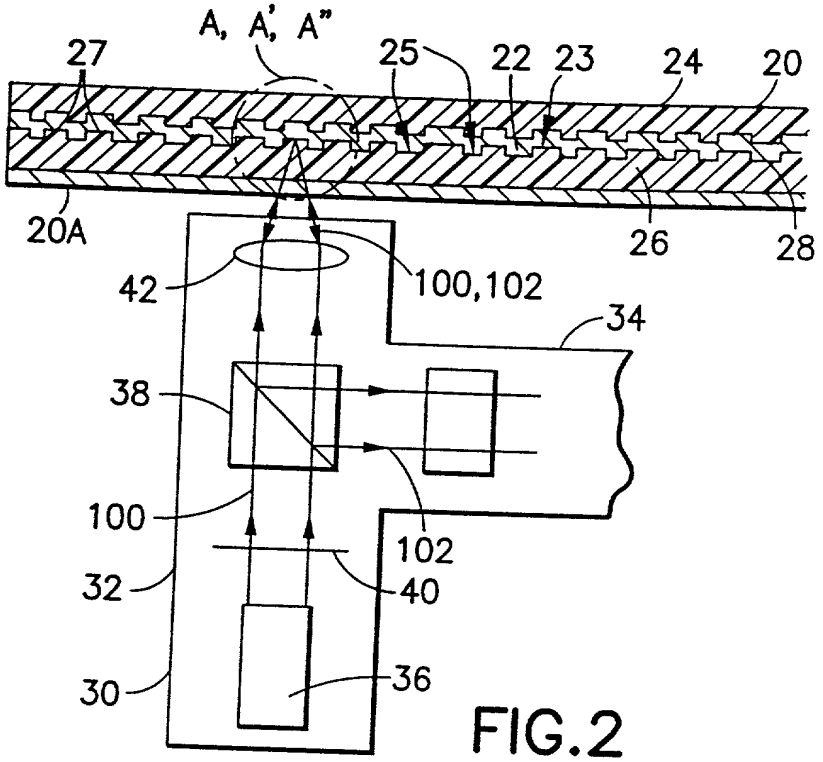

A, A', A"
27
25
22
23
24
20
20A
26
28
42
100,102
34
38
100
102
32
40
30
36

FIG.2

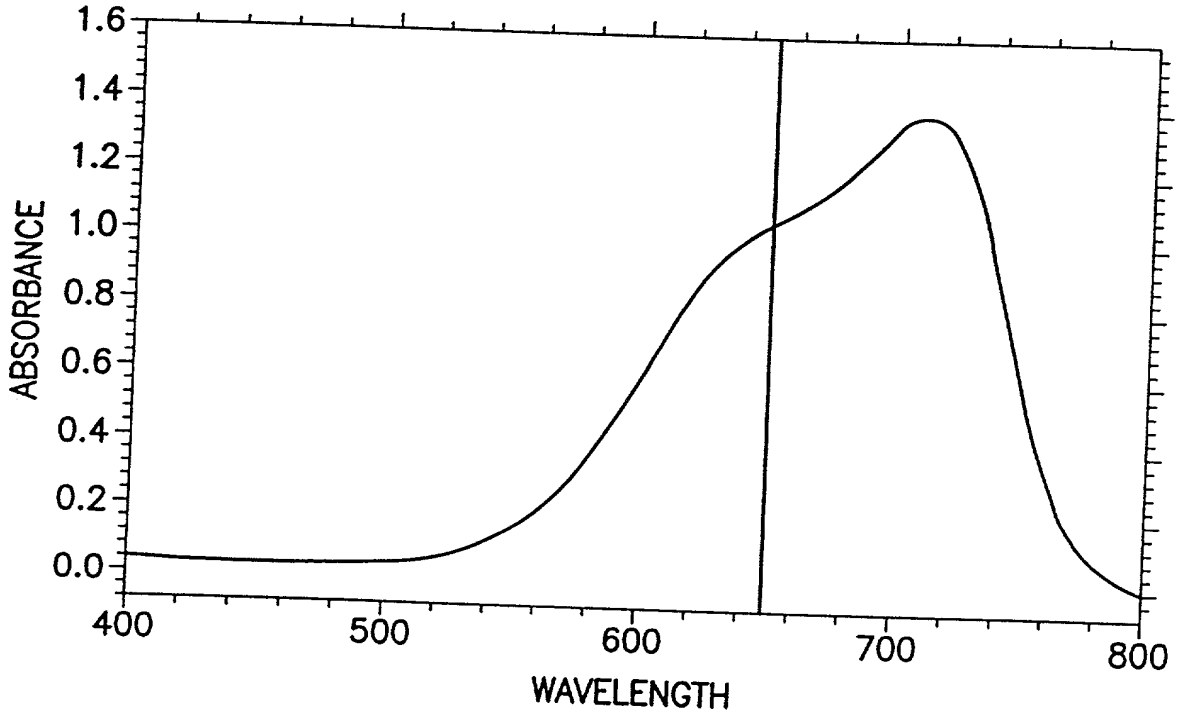
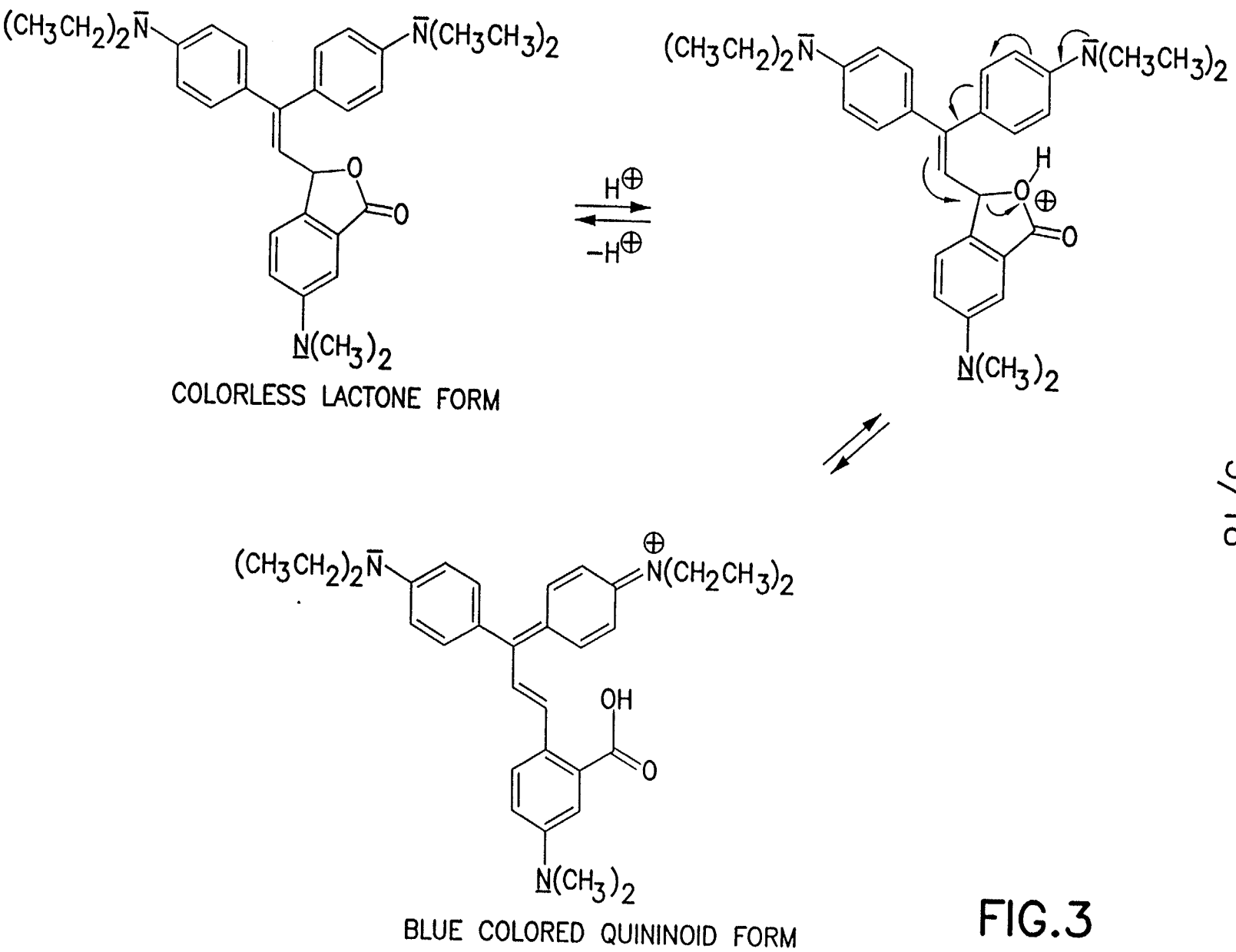

1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
ABSORBANCE
400
500
600
700
800
WAVELENGTH

FIG.4



COLORLESS LACTONE FORM

BLUE COLORED QUININOID FORM

FIG.3

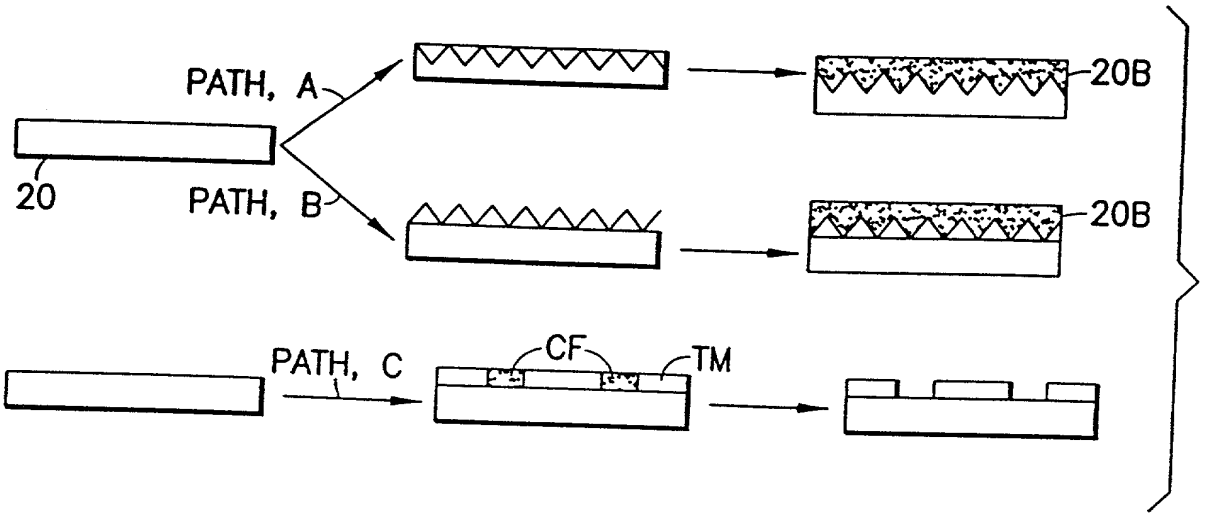


FIG.5

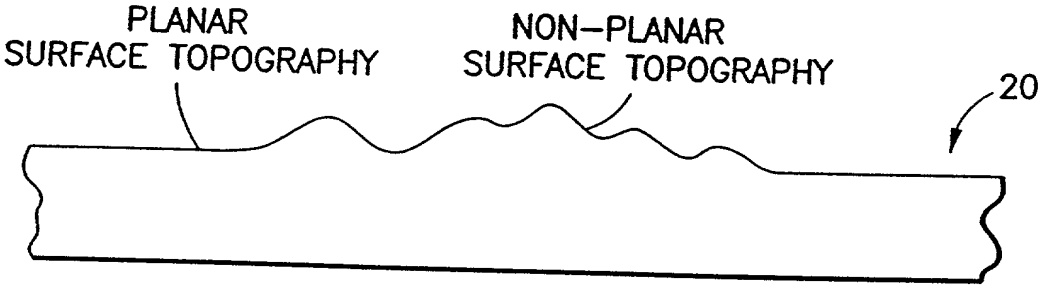


FIG.6

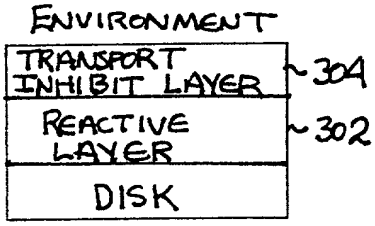


FIG.17

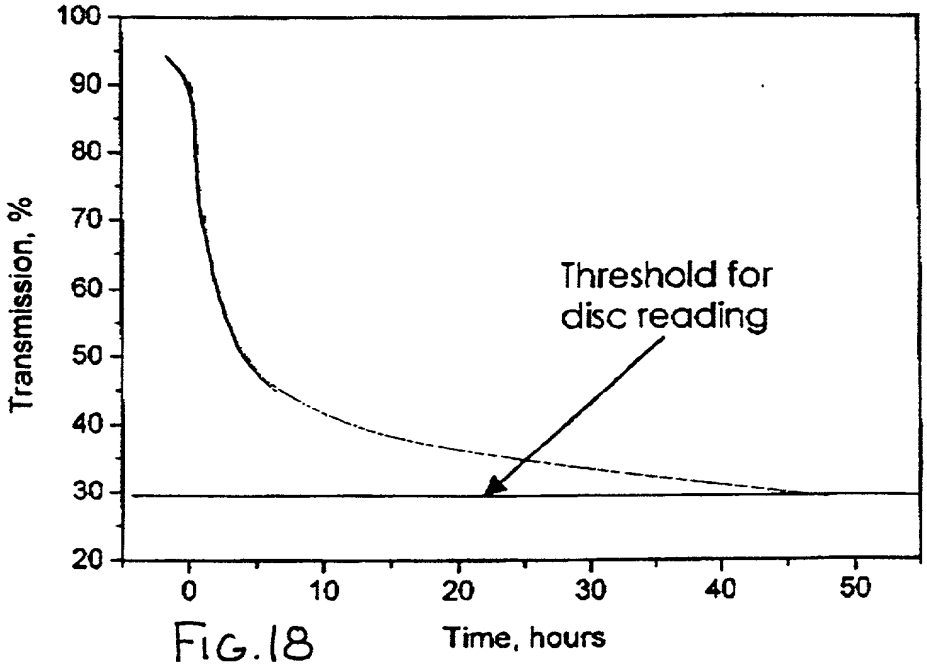


FIG.18

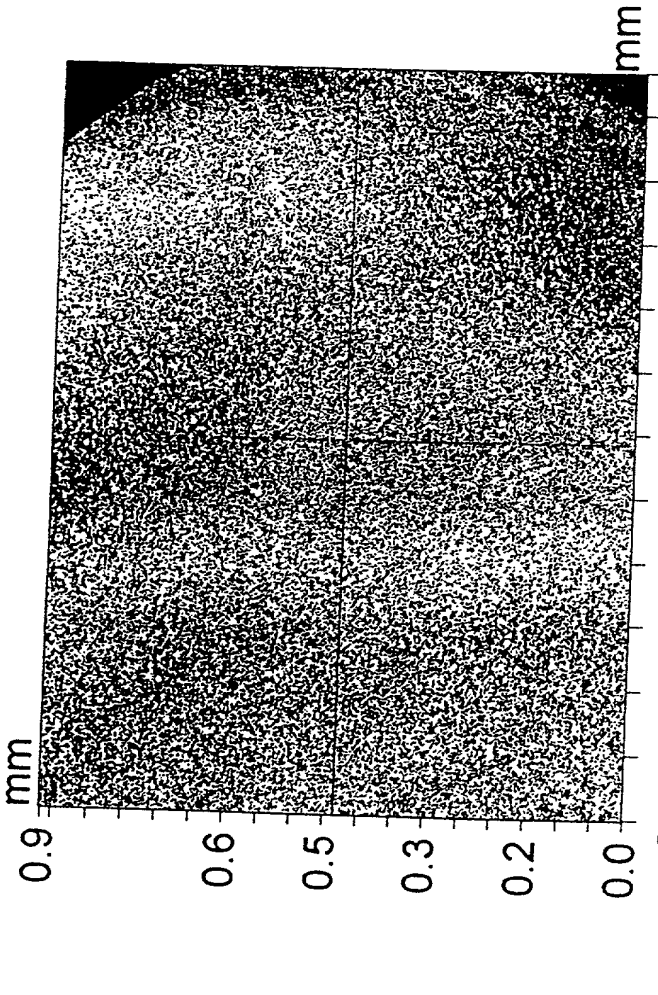
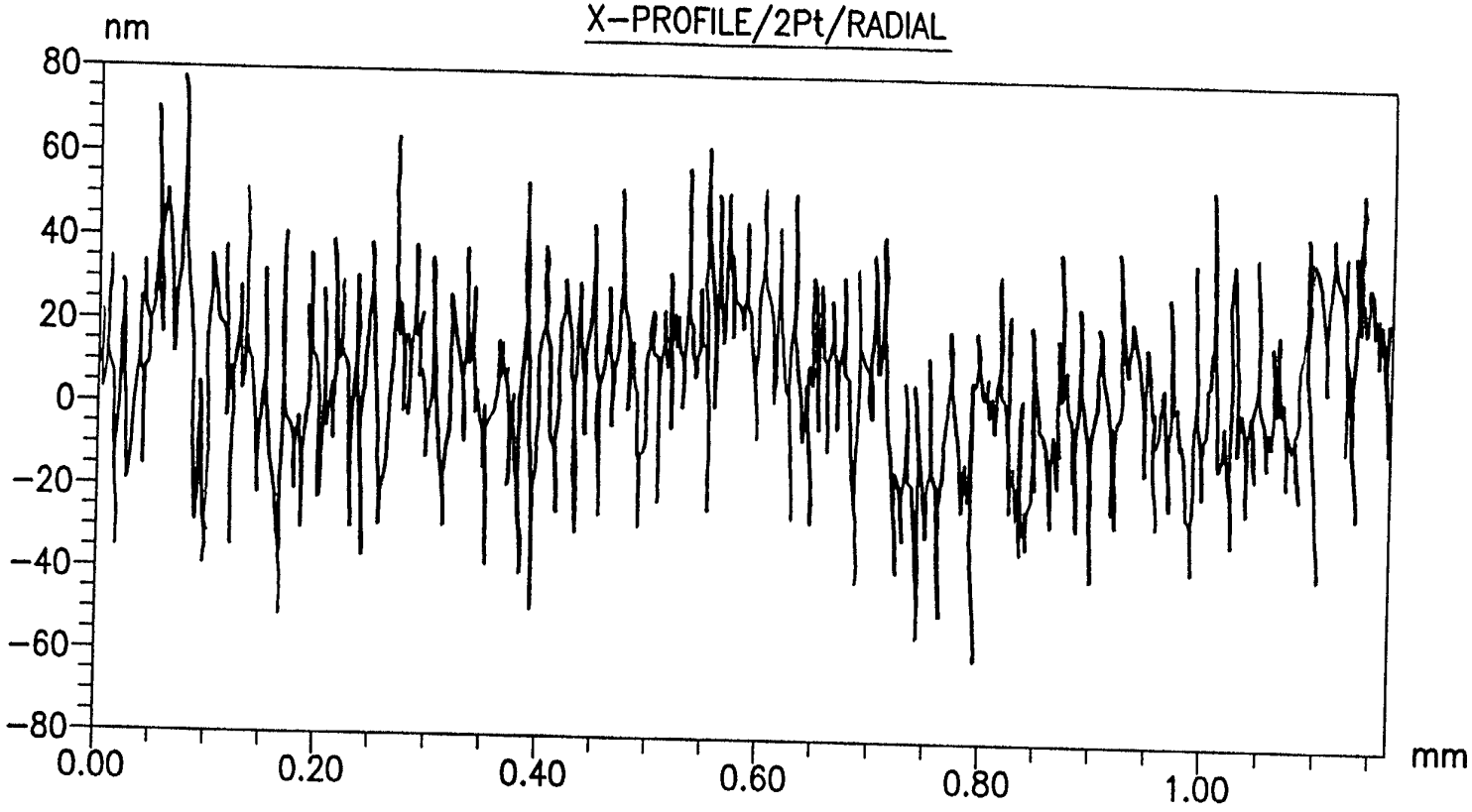


FIG.7A

FIG.7A
FIG.7B
FIG.7C

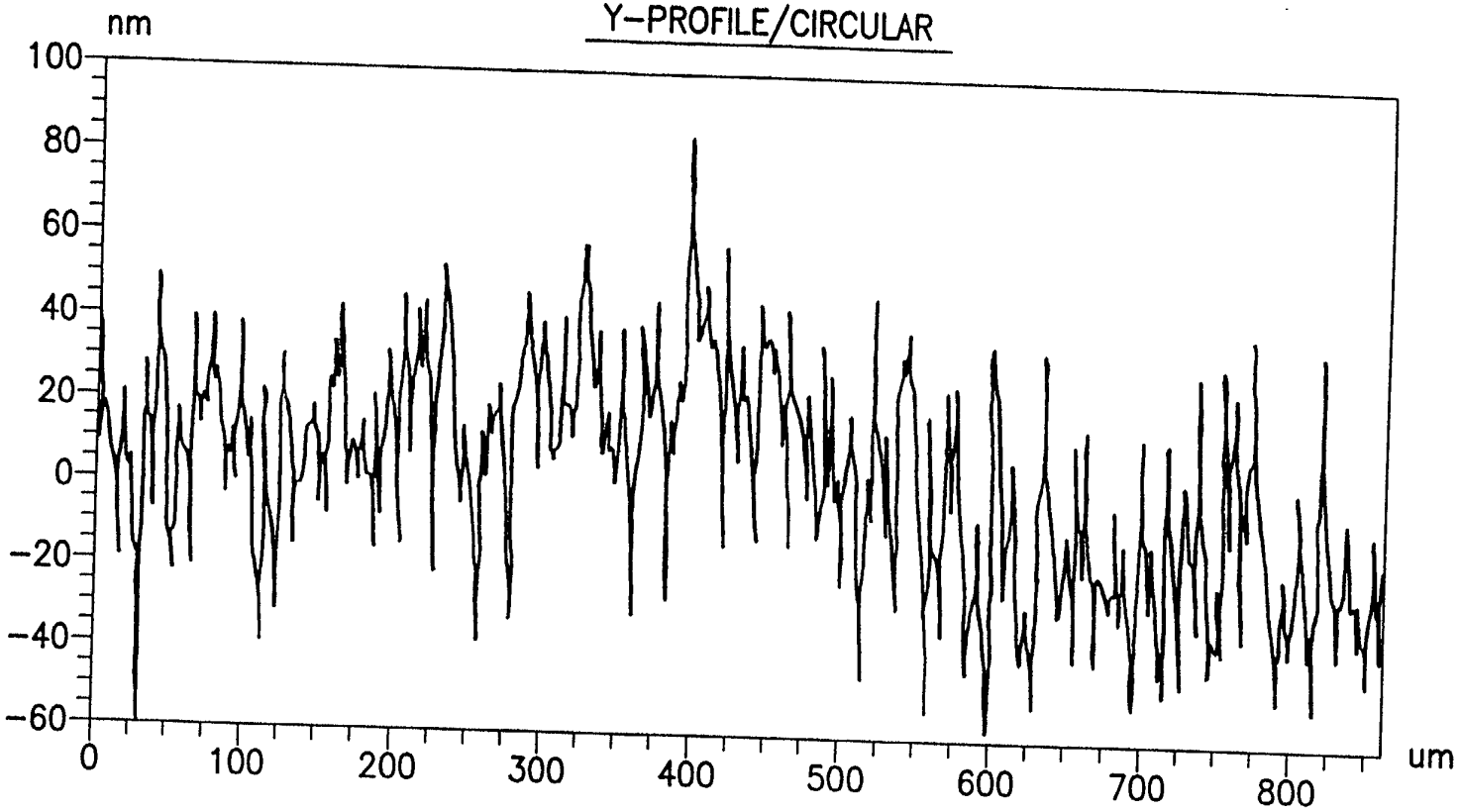
FIG.7



Rq: 21.82nm
Ra: 17.62nm
Rt: 138.20nm
Rp: 77.69nm
Rv: -60.51nm

L: 0.00mm 11.93nm
R: 1.17mm –
D: 1.17mm –
ANGLE: –
CURVE: 46.57m
TERMS: NONE
AvgHt: 6.97nm
AREA: 8.13um^2

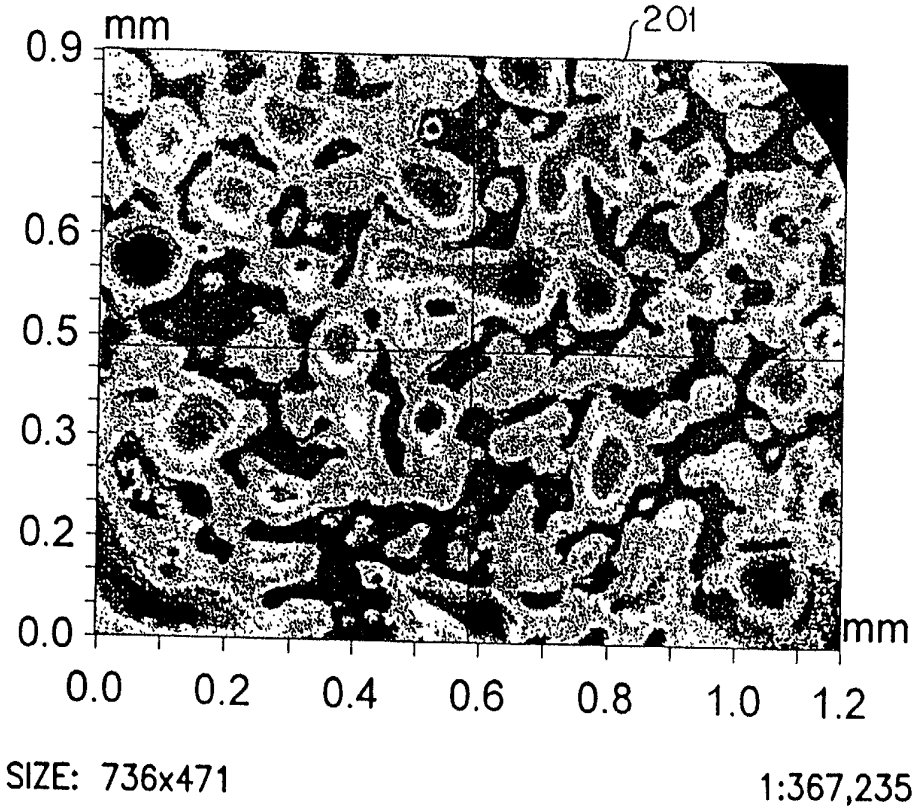
FIG.7B



Rq: 25.38nm
Ra: 21.04nm
Rt: 141.76nm
Rp: 82.86nm
Rv: -58.89nm

L: 0.00um 17.34nm
R: 865.68um –
D: 865.68um –
ANGLE: –
CURVE: -3.45m
TERMS: NONE
AvgHt: 3.16nm
AREA: 2734.81um2

FIG.7C

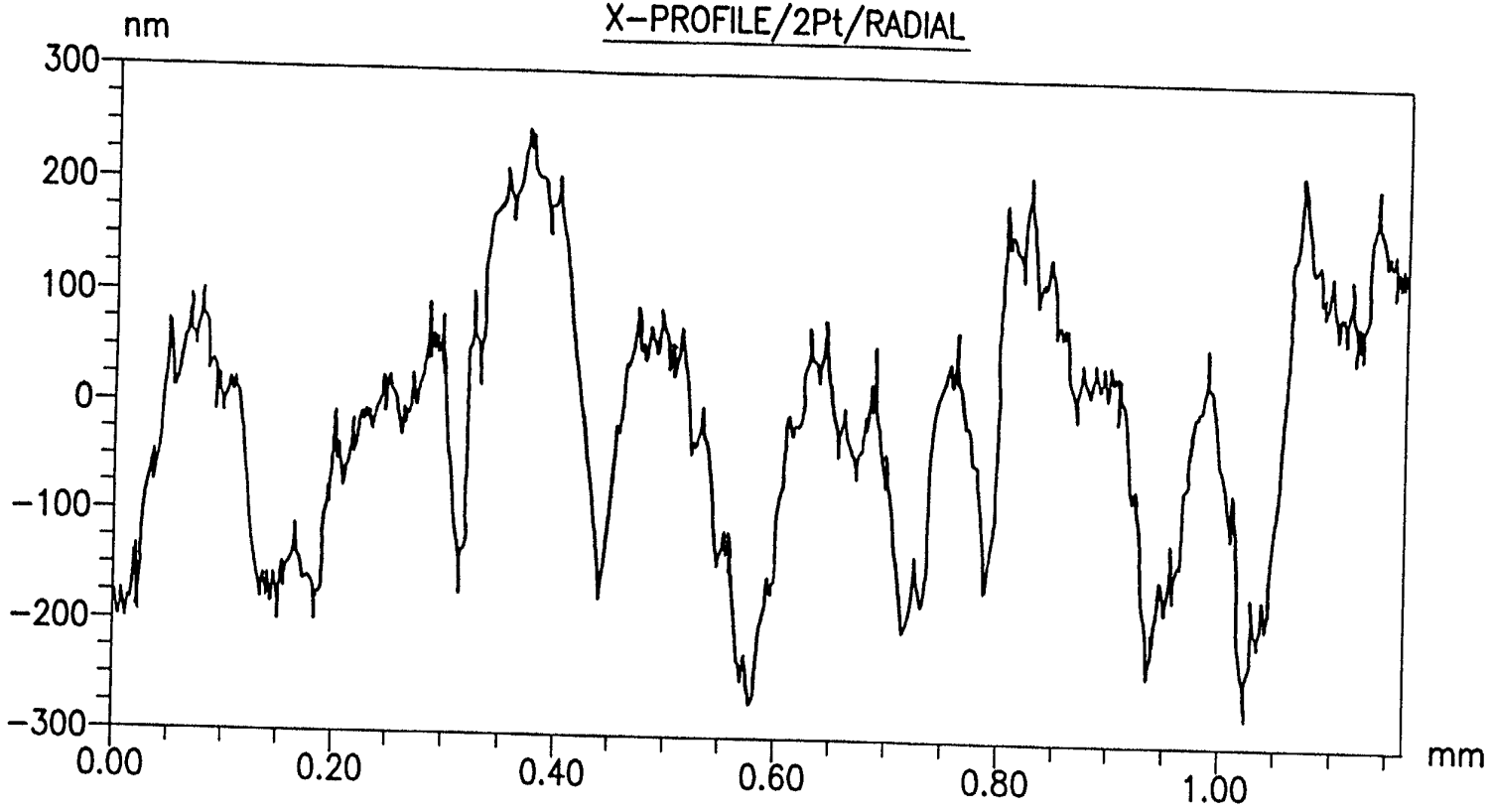


TEXTURED SURFACE

FIG.8A

FIG.8A
FIG.8B
FIG.8C

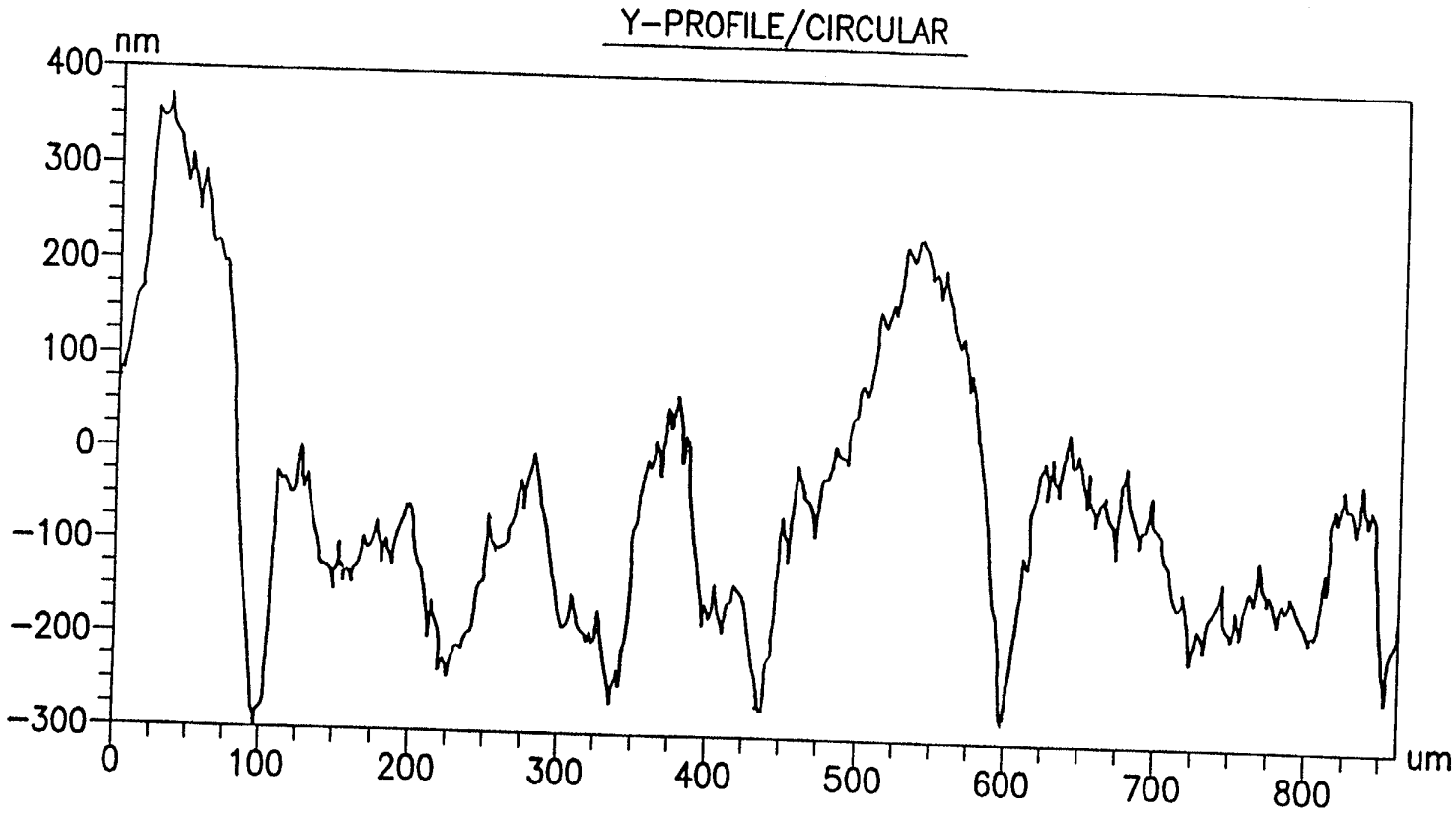
FIG.8



Rq: 115.92mm
Ra: 94.16nm
Rt: 522.17mm
Rp: 245.05nm
Rv: -277.12nm

L: 0.00mm -203.66nm
R: 1.17mm -
D: 1.17mm -
ANGLE -
CURVE 26.43mm
TERMS NONE
AvgHt: -14.15nm
AREA: $-16.52um^2$

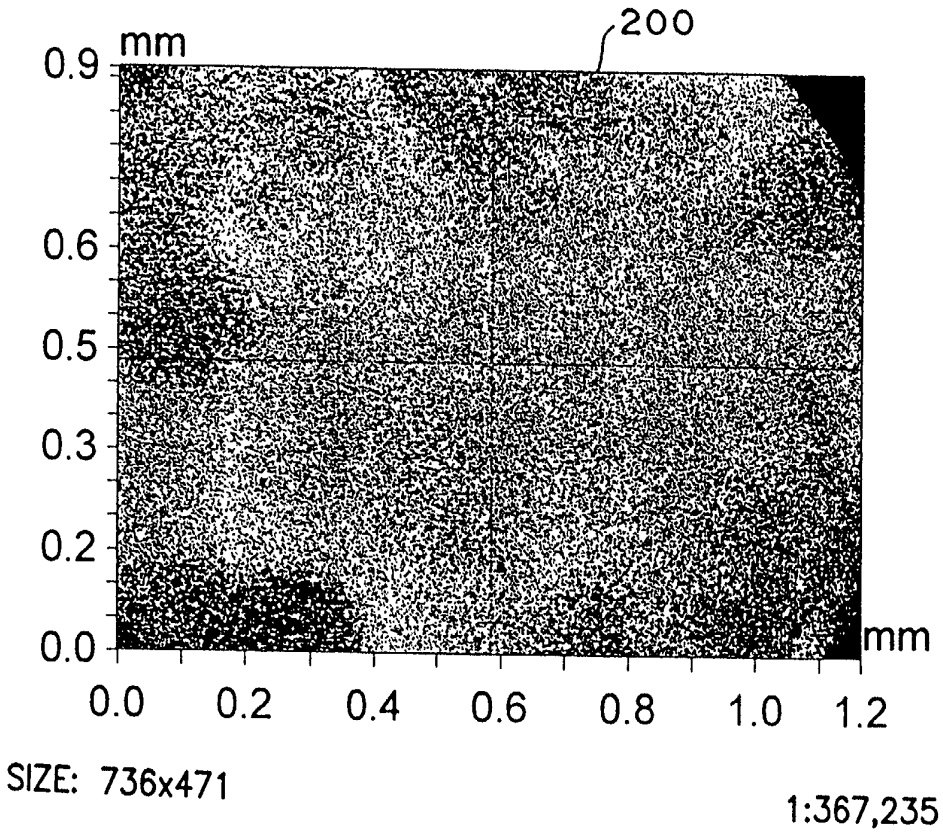
FIG.8B



Rq: 144.84nm
Ra: 112.77nm
Rt: 666.57nm
Rp: 367.04nm
Rv: −299.53nm

L: 0.00mm 81.62nm
R: 865.68um −
D: 865.68um −
ANGLE: −
CURVE: 1.20m
TERMS: NONE
AvgHt: −51.72nm
AREA: −44772.98um 2

FIG.8C

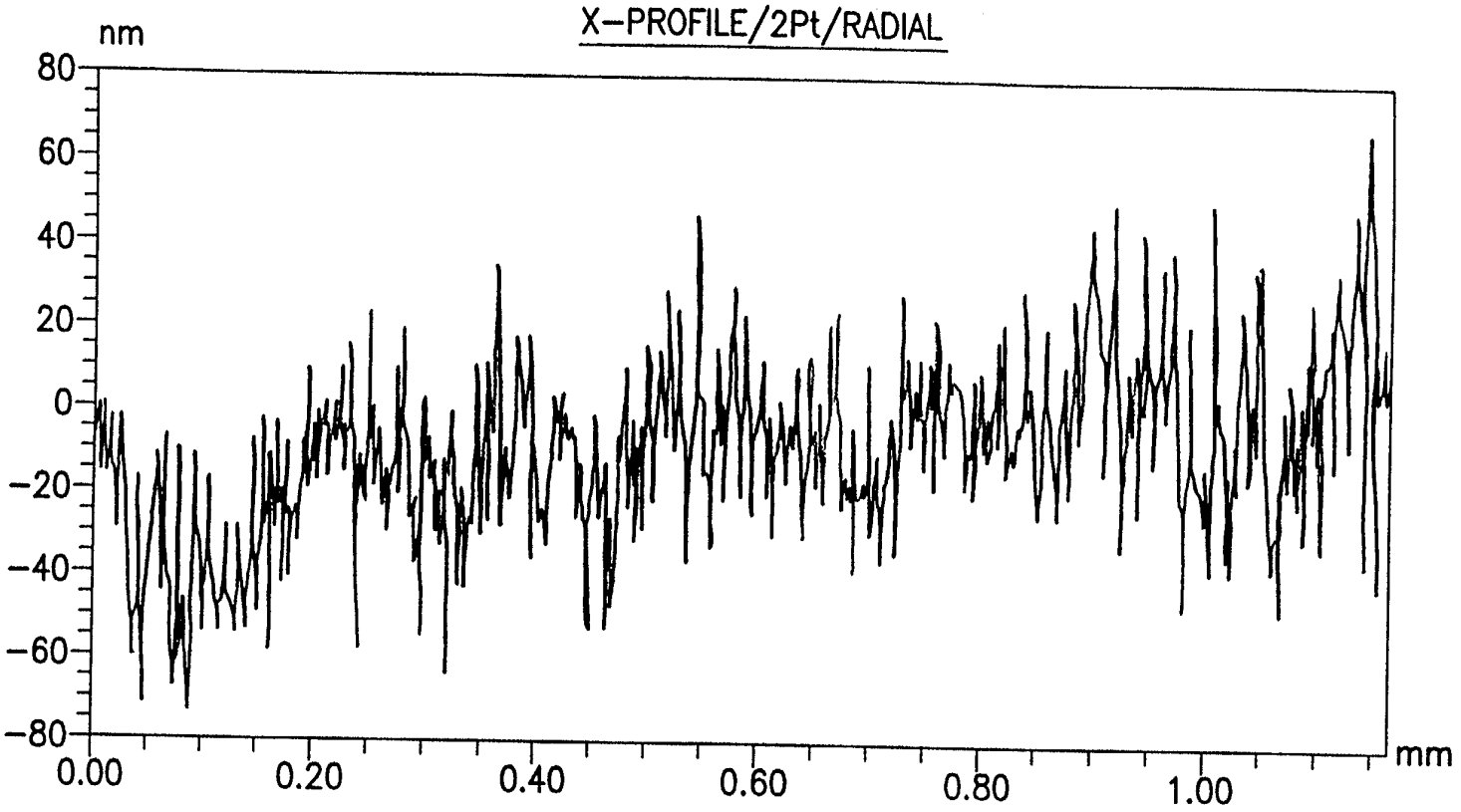


PROTECTIVE COATING

FIG.9A

FIG.9A
FIG.9B
FIG.9C

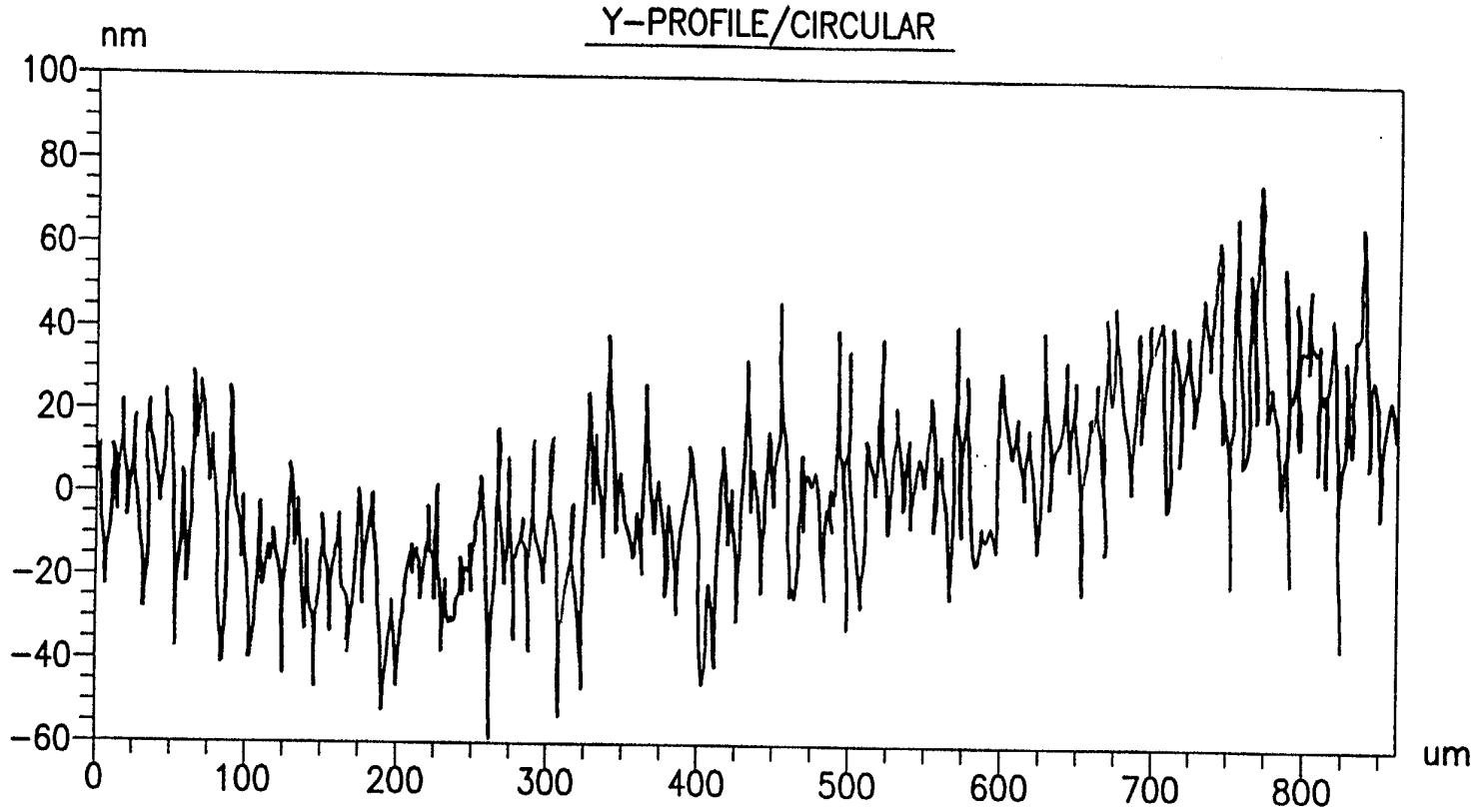
FIG.9



Rq: 22.00nm
Ra: 17.05nm
Rt: 143.83nm
Rp: 69.69nm
Rv: −74.13nm

L: 0.00mm −6.68nm
R: 1.17mm −
D: 1.17mm −
ANGLE: −
CURVE: −18.69m
TERMS: NONE
AvgHt: −8.56nm
AREA: −9.99um^2

FIG.9B



Rq: 24.22nm
Ra: 19.54nm
Rt: 140.24nm
Rp: 81.32nm
Rv: -58.91nm

L: 0.00um 11.00nm
R: 865.68um –
D: 865.68um –
ANGLE: –
CURVE: 4.61m
TERMS: NONE
AvgHt: 2.10nm
AREA: 1821.47um^2

FIG.9C

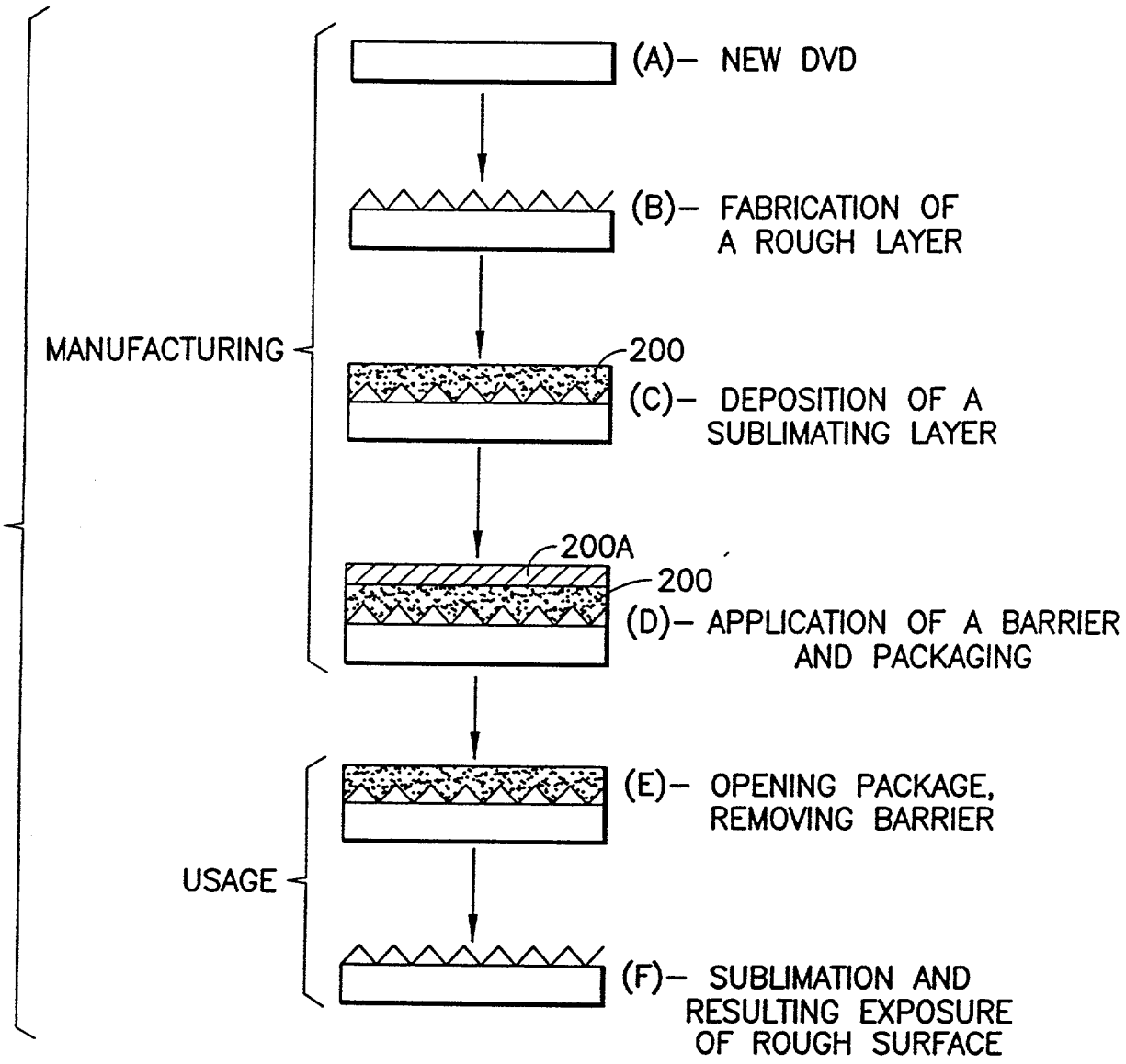

(A)– NEW DVD
(B)– FABRICATION OF A ROUGH LAYER
MANUFACTURING
200
(C)– DEPOSITION OF A SUBLIMATING LAYER
200A
200
(D)– APPLICATION OF A BARRIER AND PACKAGING
(E)– OPENING PACKAGE, REMOVING BARRIER
USAGE
(F)– SUBLIMATION AND RESULTING EXPOSURE OF ROUGH SURFACE

FIG.10

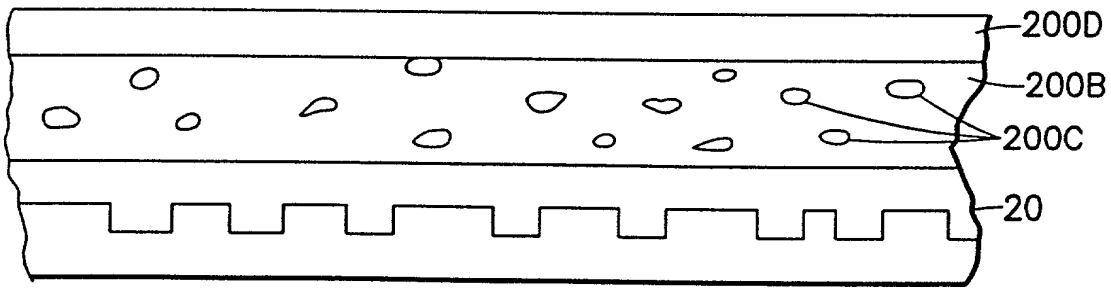

200D
200B
200C
20

FIG.12

TIME (HOURS)	WEIGHT LOSS (mg)
0	0
2.33	1.5
19.93	9.2
26.50	11.9
43.17	17.8
51.33	20.8

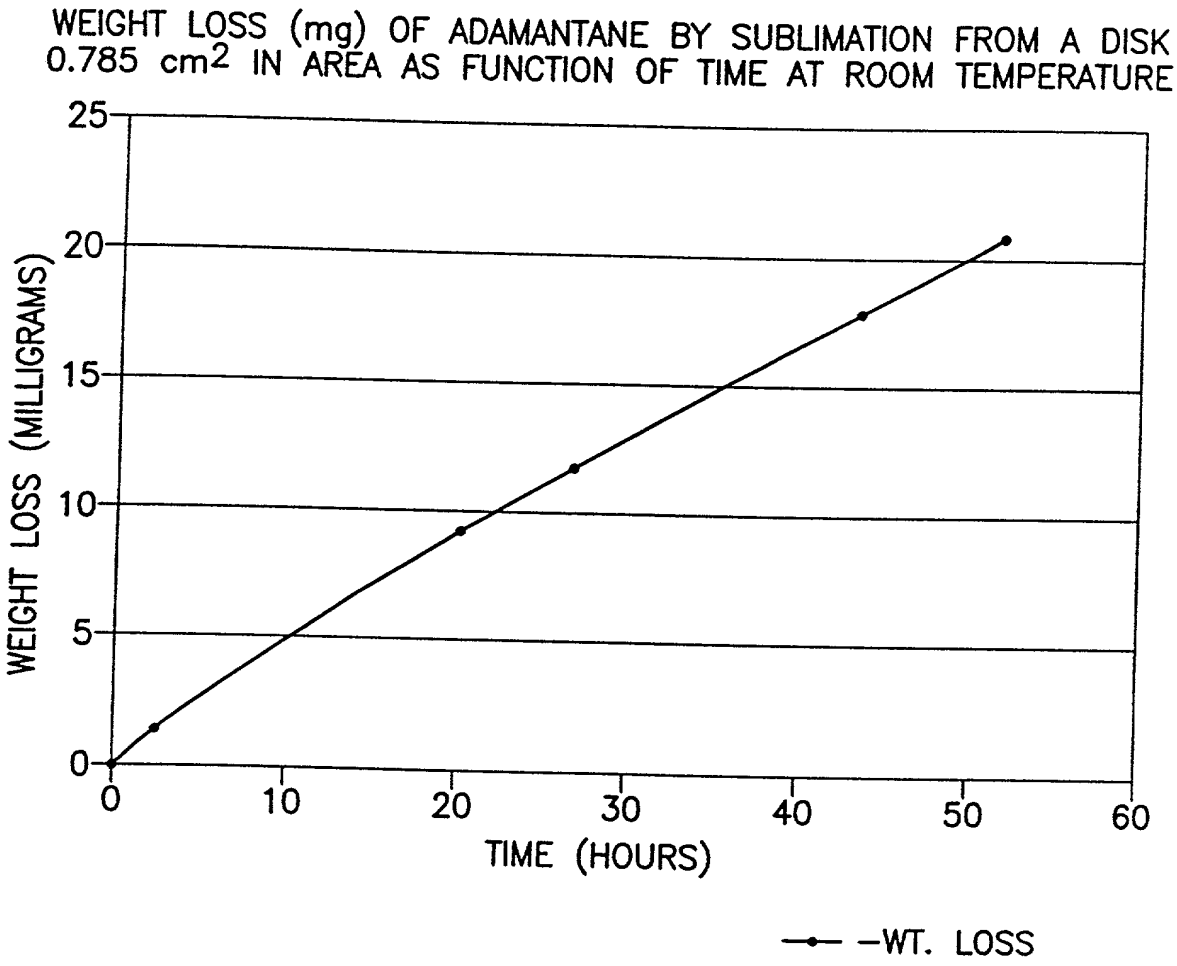


FIG. 11

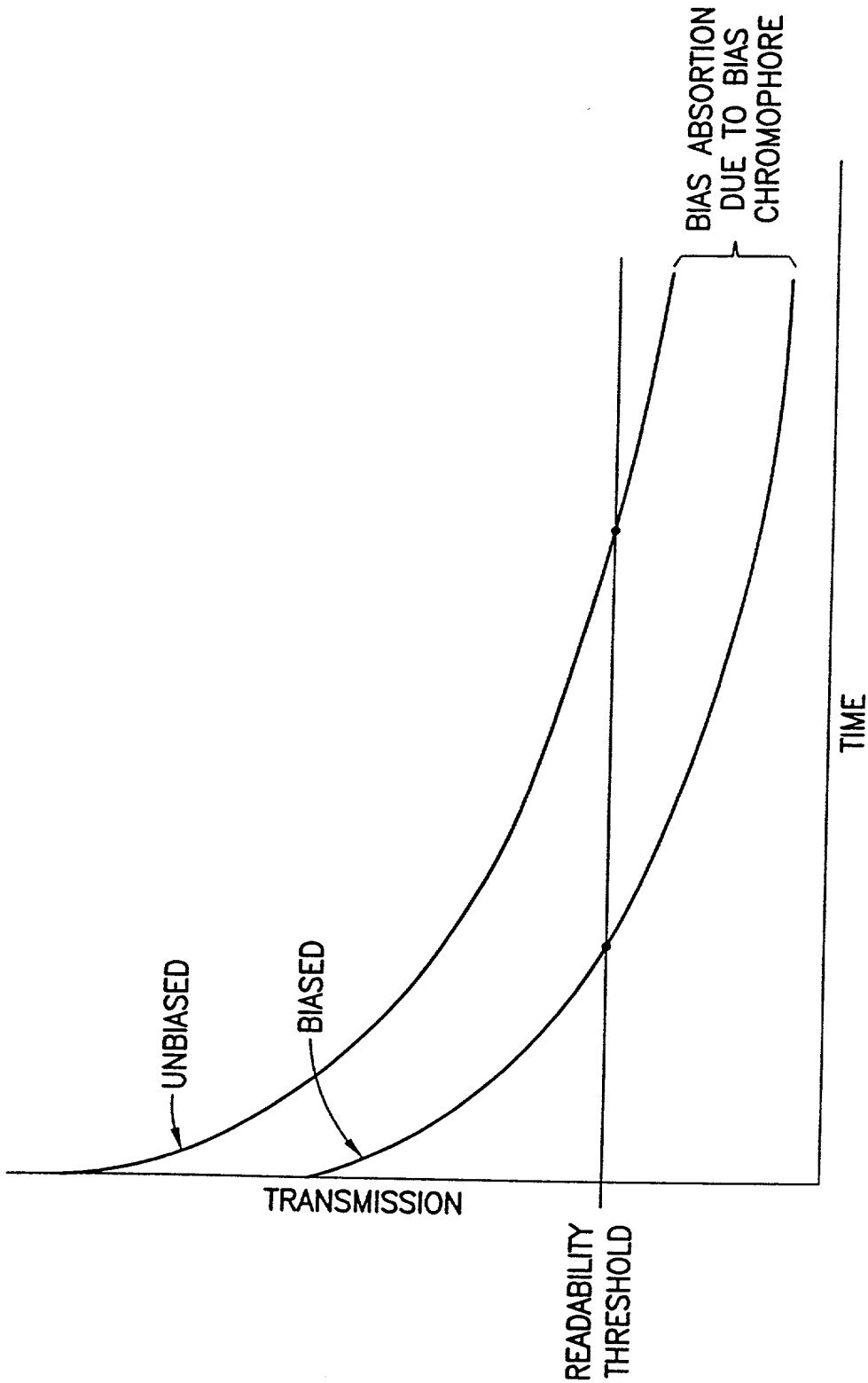

BIAS ABSORTION
DUE TO BIAS
CHROMOPHORE
UNBIASED
BIASED
TRANSMISSION
READABILITY
THRESHOLD
TIME

FIG.13

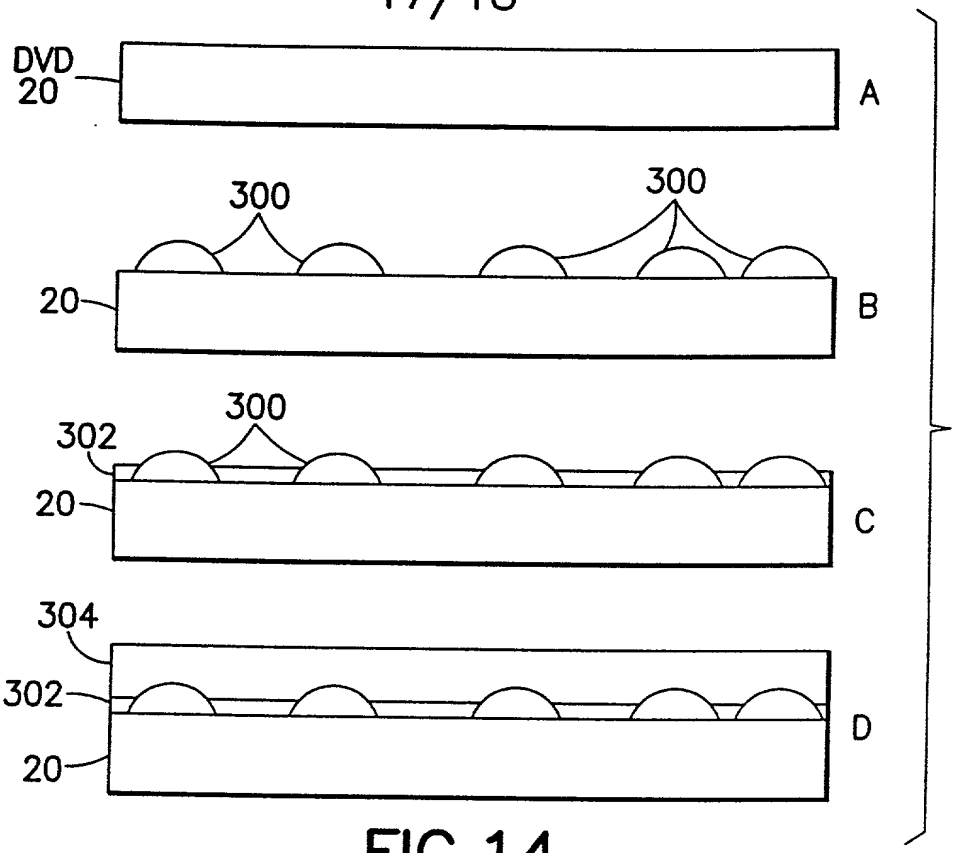

DVD
20
A
300
300
20
B
300
302
20
C
304
302
20
D

FIG.14

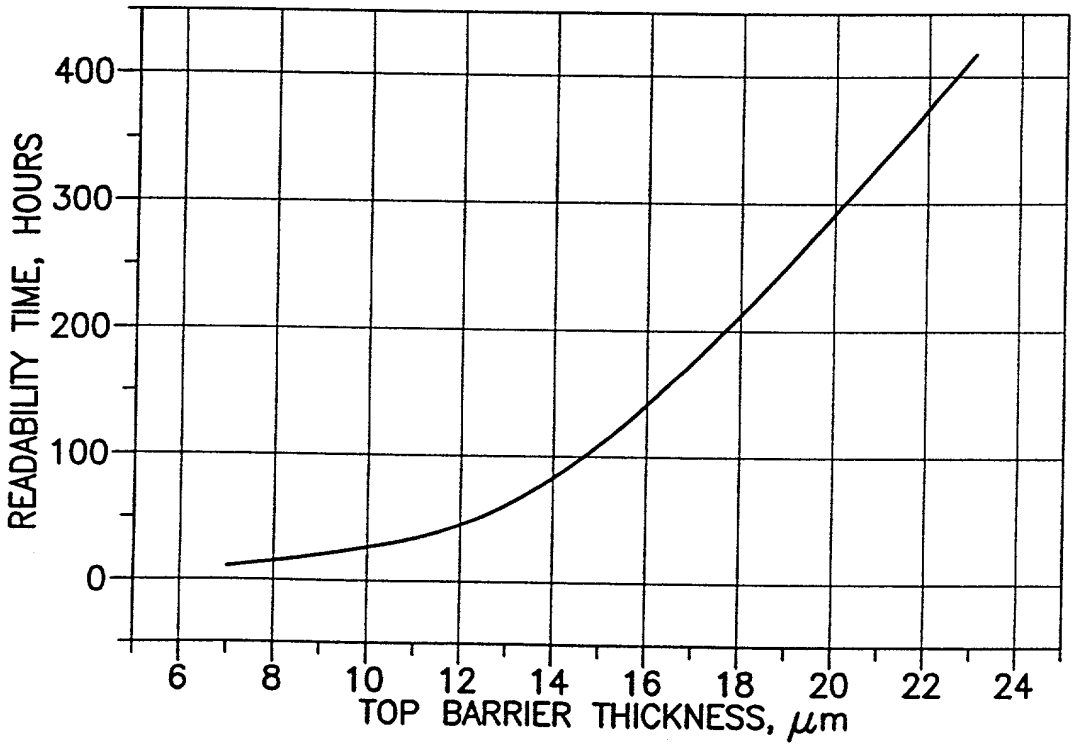

READABILITY TIME, HOURS
400
300
200
100
0
6
8
10
12
14
16
18
20
22
24
TOP BARRIER THICKNESS, μm

FIG.15

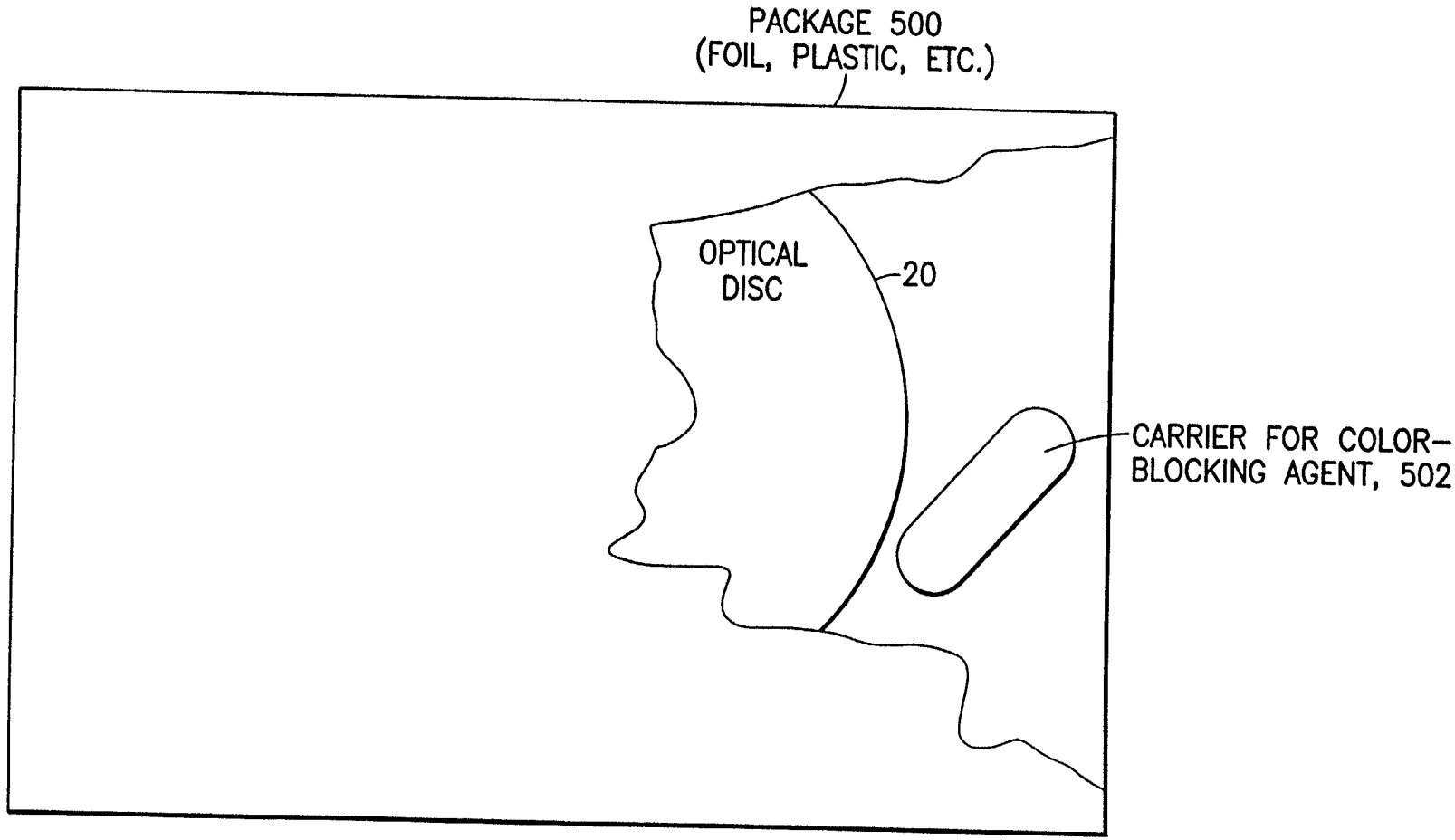

PACKAGE 500
(FOIL, PLASTIC, ETC.)
OPTICAL
DISC
20
CARRIER FOR COLOR-
BLOCKING AGENT, 502

FIG.16